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(21)Application number : 09-261710 (71)Applicant : ASAHI CHEM IND CO LTD

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(54) LITHIUM SECONDARY BATTERY AND NEGATIVE ELECTRODE USED THEREFOR

(57)Abstract:

PROBLEM TO BE SOLVED: To provide capacity higher than one using a carbon negative electrode by mainly using an intermetallic compound containing metal or semimetal of a 4B group as a negative electrode active material, and using an alloy containing at least one or more kinds of metals or semimetals except for an element to form the intermetallic compound.

SOLUTION: Sn and Pb are cited as metal of a 4B group, and Si and Ge are cited as semimetal of the 4B group. AsSn and AuSn exist as a material containing Sn. AuPb<sub>2</sub> and CaPb<sub>3</sub> exist as a material containing Pb. As<sub>3</sub>GeLi<sub>3</sub> and CoFeGe exist as a material containing Ge. MgSnB<sub>x</sub> and Mg<sub>2</sub>SnF<sub>e</sub><sub>x</sub> are cited as the composition of an alloy. In these, the other metallic element or a semimetallic element existing on a periphery of an intermetallic compound operates as a reinforcing material, and since a structure is maintained, the degradation such as pulverization of an active material caused by repetitive charge./discharge is hardly caused.

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